Listing of Claims:

1. (Original) A continuous glucose monitoring system, comprising:

a sensor configured to detect one or more glucose levels;

a transmitter operatively coupled to the sensor, the transmitter configured to receive the detected one or more glucose levels, the transmitter further configured to transmit signals corresponding to the detected one or more glucose levels; and

a receiver operatively coupled to the transmitter configured to receive transmitted signals corresponding to the detected one or more glucose levels.

2. (Original) The system of claim 1 wherein the receiver is operatively coupled to the transmitter via an RF communication link.

3. (Original) The system of claim 1 wherein the transmitter is configured to encode the detected one or more glucose levels received from the sensor to generate encoded signals, the transmitter further configured to transmit the encoded signals to the receiver.

4. (Original) The system of claim 3 wherein the receiver is configured to decode the encoded signals received from the transmitter.

5. (Original) The system of claim 3 wherein the transmitter is configured to transmit the encoded signals to the receiver at a transmission rate of one data point per minute.

6. (Original) The system of claim 1 wherein the transmitter is configured to transmit three data points per minute to the receiver, said three data points corresponding to the detected one or more glucose levels.

7. (Original) The system of claim 6 wherein said three data points include a current data point and two previous data points.

8. (Original) The system of claim 7 wherein the current data point corresponds to a current glucose level, and wherein the two previous data points include two consecutive glucose levels, said one of the two consecutive glucose levels immediately preceding the current glucose level.

9. (Original) The system of claim 1 wherein the receiver includes an output unit for outputting the received transmitted signals corresponding to one or more glucose levels.

10. (Original) The system of claim 9 wherein the output unit includes a display unit for displaying data corresponding to said one or more glucose levels.

11. (Original) The system of claim 10 wherein the display unit includes one of a LCD display, a cathode ray tube display, and a plasma display.

12. (Original) The system of claim 10 wherein the displayed data includes one or more of an alphanumeric representation corresponding to the one or more glucose levels, a graphical representation of the one or more glucose levels, and a three-dimensional representation of the one or more glucose levels.

13. (Original) The system of claim 10 wherein the display unit is configured to display the data corresponding to the one or more glucose levels substantially in real time.

14. (Original) The system of claim 9 wherein the output unit includes a speaker for outputting an audio signal corresponding to said one or more glucose levels.

22. (Original) The system of claim 21 wherein the receiver is operatively coupled to the transmitter via an RF communication link.

23. (Original) The system of claim 21 wherein the transmitter is configured to encode the detected one or more glucose levels received from the sensor to generate encoded signals, the transmitter further configured to transmit the encoded signals to the receiver.

24. (Original) The system of claim 23 wherein the receiver is configured to decode the encoded signals received from the transmitter.

25. (Original) The system of claim 23 wherein the transmitter is configured to transmit the encoded signals to the receiver at a transmission rate of one data point per minute.

26. (Original) The system of claim 21 wherein the transmitter is configured to transmit said current data point and said at least one previous data points in a single transmission per minute to the receiver.

27. (Original) The system of claim 21 wherein the current data point corresponds to a current glucose level, and wherein said at least one previous data point includes at least two previous data points corresponding respectively to at least two consecutive glucose levels, said one of the at least two consecutive glucose levels immediately preceding the current glucose level.

28. (Original) The system of claim 21 wherein the receiver includes an output unit for outputting the received transmitted signals corresponding to one or more glucose levels.

15. (Original) The system of claim 1 wherein the receiver is configured to store an identification information corresponding to the transmitter.

16. (Original) The system of claim 15 wherein the receiver is further configured to perform a time hopping procedure for synchronizing with the transmitter.

17. (Original) The system of claim 1 wherein the receiver is configured to synchronize with the transmitter based on the signal strength detected from the transmitter.

18. (Original) The system of claim 17 wherein the detected signal strength exceeds a preset threshold level.

19. (Original) The system of claim 1 wherein the transmitter is encased in a substantially water tight housing.

20. (Original) The system of claim 1 wherein the transmitter includes a disable switch for temporarily disabling the transmission of the signals.

21. (Original) A continuous glucose monitoring system, comprising:

a sensor configured to detect one or more glucose levels;

a transmitter operatively coupled to the sensor, the transmitter configured to receive the detected one or more glucose levels, the transmitter further configured to transmit signals corresponding to the detected one or more glucose levels; and

a receiver operatively coupled to the transmitter configured to receive transmitted signals corresponding to the detected one or more glucose levels;

wherein the transmitter is configured to transmit a current data point and at least one previous data point, said current data point and said at least one previous data point corresponding to the detected one or more glucose levels.

29. (Original) The system of claim 28 wherein the output unit includes a display unit for displaying data corresponding to said one or more glucose levels.

30. (Original) The system of claim 29 wherein the display unit includes one of a LCD display, a cathode ray tube display, and a plasma display.

31. (Original) The system of claim 29 wherein the displayed data includes one or more of an alphanumeric representation corresponding to the one or more glucose levels, a graphical representation of the one or more glucose levels, and a three-dimensional representation of the one or more glucose levels.

32. (Original) The system of claim 29 wherein the display unit is configured to display the data corresponding to the one or more glucose levels substantially in real time.

33. (Original) The system of claim 28 wherein the output unit includes a speaker for outputting an audio signal corresponding to said one or more glucose levels.

34. (Original) The system of claim 21 wherein the receiver is configured to store an identification information corresponding to the transmitter.

35. (Original) The system of claim 34 wherein the receiver is further configured to perform a time hopping procedure for synchronizing with the transmitter.

36. (Original) The system of claim 21 wherein the receiver is configured to synchronize with the transmitter based on the signal strength detected from the transmitter.

37. (Original) The system of claim 36 wherein the detected signal strength exceeds a preset threshold level.

38. (Original) The system of claim 1 wherein the transmitter is encased in a substantially water tight housing.

39. (Original) The system of claim 1 wherein the transmitter includes a disable switch for temporarily disabling the transmission of the signals.

40. (Original) A method of providing data communication in a continuous glucose monitoring system, the method comprising the steps of:

receiving an identification information corresponding to a transmitter;
detecting data within a predetermined RF transmission range;
determining whether the detected data is transmitted from the transmitter;
decoding the detected data;
generating an output signal corresponding to the decoded data.

41. (Original) The method of claim 40 wherein the step of determining whether the detected data transmission is transmitted from the transmitter is based on the received identification information.

42. (Original) The method of claim 40 wherein the step of determining whether the detected data transmission is transmitted from the transmitter is based on the signal strength and duration of the detected data within the predetermined RF transmission range.

43. (Original) The method of claim 40 wherein the step of decoding further includes the step of performing error correction on the decoded data.

44. (Original) The method of claim 40 wherein the step of decoding includes the step of performing Reed-Solomon decoding on the detected data.

45. (New) A sensor assembly to monitor an analyte, the sensor assembly comprising:

a transcutaneous electrochemical sensor comprising analyte-responsive enzyme; and

a sensor control unit adapted for receiving a portion of the transcutaneous electrochemical sensor, the sensor control unit comprising an rf transmitter that is configured and arranged to transmit data related to analyte-dependent signals generated by the electrochemical sensor.

46. (New) The sensor assembly of claim 45 wherein the sensor control unit comprises at least one conductive contact and the transcutaneous electrochemical sensor comprises at least one working electrode and at least one contact pad coupled to the at least one working electrode, the at least one contact pad being disposed on a portion of the electrochemical sensor extending out of the skin, wherein the at least one conductive contact is configured and arranged to contact the at least one contact pads.

47. (New) The sensor assembly of claim 45, wherein the sensor control unit is adapted to receive a portion of the transcutaneous electrochemical sensor extending out of the skin, the transcutaneous electrochemical sensor comprising a planar substrate.

48. (New) The sensor assembly of claim 45 wherein the sensor control unit is water resistant.

49. (New) The sensor assembly of claim 45 wherein the sensor control unit further comprises a battery.

50. (New) The sensor assembly of claim 45 wherein the sensor control unit further comprises an alarm to indicate at least one of hypoglycemia, impending hypoglycemia, hyperglycemia, and impending hyperglycemia.

51. (New) The sensor assembly of claim 45 wherein the sensor control unit further comprises an rf receiver.

52. (New) The sensor assembly of claim 45 wherein the sensor control unit further comprises a processing circuit for determining a level of the analyte from a signal generated by the transcutaneous electrochemical sensor

53. (New) The sensor assembly of claim 45 wherein the analyte is glucose, and the analyte-responsive enzyme is a glucose- responsive enzyme.